85-1057

No.

Supreme Court, U.S.
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IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

OTARI CORPORATION,

Petitioner,

v.

KING INSTRUMENT CORPORATION,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

OTARI CORPORATION,
Petitioner

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QUESTIONS PRESENTED FOR REVIEW

1. Whether or not the patentee in a patent infringement action has the burden of proving equivalency in proving the issue of patent infringement of a "means-plus-function" type claim, rather than the party accused of infringement having a burden to prove a negative, i.e., non-equivalency?

2. Whether or not the U.S. Court of Appeals for the Federal Circuit is precluded from making a finding of fact *de novo* on a subject that it admits the trial court made no specific finding upon?

3. Whether or not the U.S. Court of Appeals for the Federal Circuit is precluded from making a finding of fact *de novo* when the proponent of the fact concedes that no evidence was offered on the subject?

PARTIES TO THE PROCEEDING BELOW

The parties to the proceeding in the court of appeals whose judgment is sought to be reviewed are:

Defendant-Appellee, Cross-Appellant Otari Corporation.

Plaintiff-Appellant, Cross-Appellee King Instrument Corporation.

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KING INSTRUMENT CORPORATION,

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PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Petitioner, Otari Corporation, prays that a writ of certiorari issue to review the judgment and opinion of the United States Court of Appeals for the Federal Circuit entered June 26, 1985, reported at 767 F.2d 853 (Fed. Cir. 1985),[1] adhered to after timely petition for rehearing denied on September 17, 1985.

REPORT OF OPINIONS

On April 17, 1984, Judge William A. Ingram, United States District Judge, Northern District of California,

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[1] Printed in the Appendix hereto. Reference to the Appendix is by page, i.e., A-1; the Federal Circuit opinion appears as item D, pages A-15 to A-45.

made Findings of Fact and Conclusions of Law, *inter alia*, holding Respondent King's United States Patent No. 3,637,153 valid and infringed (Appendix item A hereto, A-1). Certain of the findings were amended on July 3, 1984 (Appendix item B hereto, A-11). On July 18, 1984 a modified judgment was entered holding King's U.S. Patent No. 3,637,153 valid and infringed and making other holdings not relevant to this petition (Appendix item C hereto, A-13). Both parties appealed. On appeal the court of appeals affirmed the judgment holding that the 3,637,153 patent was valid and infringed, and made other rulings not relevant to this petition. The opinion of the court of appeals is reported at 767 F.2d 853 (Fed. Cir. 1985). A copy appears as Appendix item D hereto, A-15.

JURISDICTION

Petitioner here seeks review of the decision of the court of appeals of June 26, 1985, adhered to after a timely petition for rehearing was denied on September 17, 1985 (Appendix item E hereto, A-46). Jurisdiction of the trial court below was based on 35 U.S.C. §§ 271, 281 and 28 U.S.C. § 1338(a). Jurisdiction of this Court is founded on 28 U.S.C. §2101(c) and 28 U.S.C. §1254(1).

STATUTORY PROVISIONS INVOLVED

Title 35, United States Code, Patents

§ 271. Infringement of patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States

during the term of the patent therefor, infringes the patent.

* * *

§ 112. Specification

* * *

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. (Amended July 24, 1965, Public Law 89-83, sec. 9, 79 Stat. 261; November 14, 1975, Public law 94-131, sec. 7, 89 Stat. 691.)

STATEMENT OF THE CASE

For all purposes germane to this petition the case is one by King accusing Otari of infringing King's United States Patent No. 3,637,153 (the '153 patent), which relates to loading audio and video cassettes with tape. The '153 patent contains what are called "means-plus-function" patent claims. As explained in the argument, *infra*, an evaluation of such patent claims requires findings of equivalency *between* the mechanisms described in the specification of the patent that carry out the functions recited in the "means" clauses of the claims *and* the mechanisms in the equipment which is accused of infringement.

The errors now addressed in this petition flow from errors in the trial court, where King argued to the court that it was sufficient in attempting to prove

infringement to read the "means" clauses of a "means-plus-function" claim upon the accused equipment. The trial court erroneously adopted this argument as the law and never dealt with equivalency. The patentee King did not offer any proof of equivalency, as it has conceded in one of its briefs to the court of appeals.[2] At trial the accused party, defendant Otari, did not offer proof of infringement—equivalency or otherwise—because that was the patentee's burden.

The trial court found that there had been "direct" infringement of the '153 claims. What it meant by this is that it found that the recitals of function in the patent claims could be read on the functions carried out by the accused equipment. The court of appeals did not adopt this view. The court of appeals pointed out in its decision that there must be findings of equivalency—equivalency between what is in the accused equipment that performs the function and what is in the specification of the patent in suit that performs the function (A-31).

The court of appeals, while recognizing the need for finding equivalency, did not find non-infringement for failure of proof of equivalency, notwithstanding the concession of the patentee King that there was no evidence of equivalency in the record, and notwithstanding its own recognition that the district court had made no finding of equivalency (A-31). The court of appeals itself set about to make a finding *de novo* of equivalency. In making the finding *de novo*, the court of appeals in effect criticized Otari in its

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[2] Brief filed on January 14, 1985, at page 31, "No evidence was presented at trial on the issue—." (Appendix item F, A-48).

opinion for not presenting evidence establishing non-equivalency.

The court of appeals, erroneously thinking that the party accused of infringement should bear the burden of proving non-equivalency and non-infringement, found that the defendant Otari had failed to submit certain evidence. The court of appeals stated that, "Otari has not cited any reason or basis in the record for limiting the '153 means claims to the swing arm embodiment." (A-33). Petitioner submits that there was no obligation on Otari to submit evidence and argument to limit the claims to the illustrative embodiment of the patent. The question presented was whether the '153 patent claims could, by equivalency, reach and cover a *particular* structure different from the illustrative embodiment in the patent. It was the *patentee's* burden to prove this to be the case.

The court of appeals went on to say:

> " [T]here is *significant evidence* drawn from expert testimony which supports the conclusion [fact] that the Otari devices are § 112 equivalents of the described embodiment. This includes uncontested testimony based on observations made from video tapes of the Otari machines by Mr. Zimmerman who testified that claims 2, 4–6, 8–12, and 14–16 are directly infringed by the Otari machines. We believe that this testimony is sufficient for the district court to have concluded that Otari's machines are § 112 equivalents, and therefore literally infringe the '153 patent." (Emphasis supplied.) (A-33)

There was no "significant evidence" of equivalency because the patentee conceded that *no* evidence of

equivalency was offered. The patentee's expert read the '153 patent claims on the Otari devices and found the *functions* to be carried out in the Otari machines. He did not testify *as to equivalency of the accused mechanisms with the mechanisms in the '153 specification.* Indeed, he expressly disclaimed reliance on the doctrine of equivalence (A-50, lines 8–9).

The court of appeals then said Otari had failed in its proofs: "Otari has failed to point out why [patentee's expert] Zimmerman's conclusions were wrong,——." (A-33). The expert Zimmerman never said anything about equivalency that he could be right or wrong about. What expert Zimmerman did say was that, "In this case, I did not rely on the doctrine of equivalence." (A-50).

The court of appeals also stated: "——[Otari] has failed to describe its machines to this court——." (A-33). Petitioner submits that it was the *patentee King's* burden to provide evidence describing the machines.

The court of appeals made a finding of equivalency *de novo* notwithstanding the trial court made no finding of equivalency. The court of appeals reweighed the evidence and made its own finding of equivalency *de novo*. Under the applicable law the patentee must provide evidence of the design of the Otari machines, rather than requiring that Otari do so.

The court of appeals in conclusion referred to Rule 52(a): "——[Otari] has failed to meet its ultimate burden of convincing this court that the district court's finding of infringement was clearly erroneous." (A-33). The burden clearly was met. The trial court never made a finding of equivalency. Nor could any court

make a finding of equivalency because there was no evidence of equivalency—as the patentee conceded.

The court of appeals recognized the need for evidence of equivalency. It searched the record to see if the trial court could have found evidence to support the trial court's finding of "direct" infringement. The "direct" infringement finding was based on a concept of the law that the court of appeals found erroneous. The court of appeals then made findings of fact *de novo* where the trial court did not make any, and where the record lacked any evidence to base them on.

ARGUMENT AMPLIFYING REASONS FOR ALLOWANCE OF A WRIT

1. Introduction

The purpose of this petition is to have this Court correct the court of appeals in respect of important procedural matters, so that confusion and consequent error will be avoided in future patent cases tried in the United States district courts and brought to the court of appeals for review.

The court of appeals has erred in two respects:

First, it has erroneously held that in an infringement action the burden of proof is on the accused party to prove non-infringement, rather than upon the patentee to prove infringement.

Second, where the trial court has made no specific finding of equivalency, and admittedly there is no evidence on equivalency in the record, the court of appeals nevertheless has itself undertaken to make findings of equivalency *de novo*.

2. Proof Of Infringement Is The Patentee's Burden

The burden of proving infringement rests squarely on the patentee, *see*, e.g., *Walker On Patents*, Volume 3, page 1898 (Deller's Edition 1937): "the plaintiff has the burden of proof of infringement and may fail to sustain that burden"; *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1361 (Fed. Cir. 1983). The patentee must establish by a preponderance of evidence either literal infringement or that infringement can be found under the doctrine of equivalence, *Hughes Aircraft Co., supra.* The patentee must prove that the accused device is an equivalent, *Hughes, supra.* It is the patentee, not the infringer, who invokes the doctrine of equivalency, *Walker On Patents*, Volume 3, page 1701 (Deller's Ed. 1937). The patentee must prove that the accused device performs substantially the same function in substantially the same way to obtain substantially the same result as the claimed invention, *see Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950).

Here, however, the court of appeals did just the opposite: it placed a burden of proving non-infringement on Otari. This was a clear error of law.

3. Proof Of Equivalency In Means-Plus-Function Cases Is Necessary, And Is The Patentee's Burden

The burden of proof of patent infringement correctly remains throughout with the patentee although if the patentee fails at proving a literal infringement the patentee may invoke the doctrine of equivalency, *Graver Tank, supra*, 339 U.S. 605, 608 (1950); *Walker On Patents, supra.* While the statute allows a patentee to claim the invention in functional language, 35 U.S.C. § 112, the patentee must prove that the means for performing the function disclosed by the

patentee are the equivalent to the accused device: the accused device must be shown to perform substantially the same function in substantially the same way to obtain the same result, *Graver Tank, supra.* In the proceedings below it was the option or election of the patentee to attempt to prove or not to prove equivalency. King elected not to. No court of appeals should be allowed to come along later and make a finding of equivalency *de novo.* To do so is a clear error of law.

4. Finding Facts Is The Function Of The District Courts—Not The Courts Of Appeals

Courts of appeals must apply Rule 52(a) to the findings of a trial court sitting without a jury constantly bearing in mind that, "their function is not to decide factual issues *de novo.*" *Zenith Radio Corp. v. Hazeltine Research,* 395 U.S. 100, 123 (1968). This Court bolstered this assertion by stating: "The authority of an appellate court, when reviewing the findings of a judge as well as those of a jury, is circumscribed by the deference it must give to decisions of the trier of the fact, who is usually in a superior position to appraise and weigh the evidence." *Id.* at 123.

The finding of equivalence is a determination of a *fact, see,* e.g., *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.,* 339 U.S. 605, 608 (1950); *Thomas & Betts Corp. v. Litton Systems, Inc.,* 720 F.2d 1572 (Fed. Cir. 1983).

Rule 52 of the Federal Rules of Civil Procedure provides for findings of fact by the trial court. It begins, "In all actions tried upon the facts without a jury. . .the court shall find the facts specially. . . ." In the present case there was no jury, hence it was the duty of the trial court to find the facts.

Rule 52(a) broadly requires that findings of fact shall not be set aside unless clearly erroneous. *Pullman-Standard v. Swint*, 456 U.S. 273, 287 (1982). Rule 52(a) does not make exceptions or exclude certain categories of factual findings from the duty of a court of appeals to accept a trial court's findings unless clearly erroneous, *Pullman, supra*. Simply stated, a court of appeals is not free to arrive at or make its own independent findings of facts free from the strictures of Rule 52(a). *Pullman-Standard, supra*, 456 U.S. at 293.

A court of appeals exceeds its authority pursuant to Rule 52(a) if it assumes the fact finding role of the trial court. The standard of Rule 52 "plainly does not entitle a reviewing court to reverse the finding of the trier of fact simply because it is convinced that it would have decided the case differently." *Anderson v. Bessemer City*, 470 U.S. ___,[3] 84 L.Ed. 2d 518, 528 (1985).

Rule 52(a) is particularly appropriate in patent cases. It provides in part that: "Findings of fact shall not be set aside unless clearly erroneous, and due regard shall be given to the opportunity of the trial court to judge of the credibility of the witnesses." Within the context of resolving patent issues, "[t]o no type of case is this last clause more appropriately applicable than . . . where the evidence is largely the testimony of experts as to which a trial court may be enlightened by scientific demonstrations." *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 336 U.S. 271, 274 (1948).[4]

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[3] Page number not yet available.

[4] The Note to the 1985 amendment to Rule 52 refers to, "—

A court of appeals must not disturb the findings of a trial court simply because it would not have made the finding that the trial court made, but rather only if the court of appeals, on the entire evidence, "is left with the definite and firm conviction that a mistake has been committed." *United States v. U.S. Gypsum Co.*, 333 U.S. 364, 395 (1948). *See* also *Commissioner v. Duberstein*, 363 U.S. 278, 290 (1960).

When a trial court's findings are not clearly erroneous, the findings should not be disturbed by a higher court. *Inwood Laboratories v. Ives Laboratories*, 456 U.S. 844, 856 (1981). The Court in *Inwood* emphasized this point by stating that "[d]etermining the weight and credibility of the evidence is the special province of the finder of fact." *Id.* at 856. Furthermore, the Court stated that "An appellate court cannot substitute its interpretation of the evidence for that of the trial court simply because the reviewing court 'might give the facts another construction—' ". *Id.* at 857.

Because the mandate of a court of appeals only allows it to set aside findings of fact if found clearly erroneous, the court of appeals is not presented with a choice of giving "the facts another construction [or] resolve the ambiguities differently. . . ." *United States v. National Assoc. of Real Estate Boards*, 339 U.S. 485, 495 (1949).

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the public interest in the stability and judicial economy that would be promoted by recognizing that the trial court, not the appellate tribunal, should be the finder of the facts. To permit courts of appeals to share more actively in the fact-finding function would tend to undermine the legitimacy of the district courts in the eyes of litigants, multiply appeals by encouraging appellate retrial of some factual issues, and needlessly reallocate judicial authority."

Congress enacted the Federal Courts Improvement Act of 1982, P.L. 97-164 which created the Court of Appeals for the Federal Circuit. The legislative history of this Act, as shown by the House Committee Report, shows that Congress was concerned that recognized *de novo* fact-finding by its predecessor court might lead to improper *de facto* fact-finding by the new court:

> "It is important to understand and appreciate the fundamental difference between the use of technical advisors by the Court of Customs and Patent Appeal judges and the ex parte appeals from the Patent and Trademark Office which they now consider and a similar type of help for judges who are called upon to resolve technical issues in adversary patent infringement cases of the kind that will now be heard by the Court of Appeals for the Federal Circuit—.
>
> [T]o use these advisors in adversary patent infringement cases and have them review and assess the technical aspects of the evidence, as developed by the sworn testimony of witnesses and as covered by the findings of fact entered by the trial judge, is quite a different matter [from their use in Patent Office appeals]". H.R. Rep. No. 97-312, 97th Congr., 1st Sess. 37 (1981).

The House Committee Report went on to state that

> "[I]t is well established that factual issues in a patent case must be tried and decided by the trial judge or a jury in precisely the same manner as such issues are tried in any other kind of a law-

> suit. The technical aspects of a patent case are factual issues, and patent cases are reviewed in the Circuit Courts of Appeal in the same manner as with other appeals." H.R. Rep. No. 97-312, 97th Cong., 1st Sess. 37 (1981).

Additional legislative history on the creation of the Court of Appeals for the Federal Circuit shows that the Commission on Revision of the Federal Court Appellate System (Hruska Commission) warned Congress that "Judges of a specialized court, given their continued exposure to and great expertise in a single field of law, might impose their own views of policy even where the scope of review under the applicable law is supposed to be more limited." Senate Judicial Committee, Subcommittee on Improvements in Judicial Machinery, Position Paper of the Bar Association of the Seventh Judicial Circuit on S-677 and S-678, 97th Cong., 1st Sess. 7 (1981).

The Court of Appeals for the Federal Circuit previously has been criticized in a dissenting opinion by one of its judges for making its own findings of fact. In *Baginsky v. United States*, 697 F.2d 1070, 1077 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 981 (1983), Judge Kashiwa wrote in dissent:

> "[T]he majority finds it appropriate to usurp the function of the Claims Court and make its own *de novo* factual findings." 697 F.2d at 1077.

Judge Kashiwa continued:

> "[T]he majority's action in this case, however, turns this court, an appellate court, into an initial fact-finding body like a trial court." 697 F.2d at 1077.

Judge Kashiwa noted in *Baginsky* that the majority made its own findings of fact because of "the length of time this case has been pending.," 697 F.2d at 1078. Rule 52(a) should be applied evenhandedly and not arbitrarily on the basis of the length of the pendency of the case.

Also, in *Jones v. Hardy*, 727 F.2d 1524 (Fed. Cir. 1984), Judge Kashiwa commented,

> "[T]he majority improperly stepped into the province of the factfinder and formulated Paragraph No. 17. See *Cloud v. Standard Packaging Corp.*, 376 F.2d 384, 391, 153 USPQ 317, 322-23 (7th Cir. 1967)." 727 F.2d at 1534, 1535.

The basis for the majority making *de novo* findings was "in the interests of judicial economy," see 727 F.2d at 1534. Again Rule 52(a) should be applied evenhandedly and not based on a standard of judicial economy. Nowhere does Rule 52(a) say it should not be followed to promote judicial economy.

This Court is receiving more and more petitions wherein the petitioners are complaining that the Court of Appeals for the Federal Circuit is impermissibly making *de novo* fact findings. By way of example, *see* the following: *Baginsky v. United States*, *supra*; *Valmet Oy v. Beloit Corp.*, unpublished (Fed. Cir. 1984), *cert. denied*, 86 L.Ed. 2d 721 (1985); *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898 (Fed. Cir. 1985), *cert. denied*, 54 LW 3225 (1985).

It is true that what is a question of law and what is a finding of fact can be difficult to ascertain, but that is not the case here, *see Baumgartner v. United*

States, 322 U.S. 665 (1944); it is beyond dispute that a finding of patent infringement by equivalence is a finding of fact and is to be made in the first instance by the trial court and not on appeal, *see Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950).

In the instant case there could be no findings of equivalence for the simple reason that the patentee chose not to submit any evidence of equivalence. Notwithstanding such a state of the record, the court of appeals went on to find *de novo* equivalence where none could exist. This was substantial clear error.

When a factual finding is made, based on applying an incorrect rule of law, the court of appeals is required to remand for factual findings in light of the correct rule of law as indicated by the court. *NLRB v. Pipefitters*, 429 U.S. 507, 522 (1977); *ICC v. Clyde*, 181 U.S. 29, 32-33 (1901). *See* also, *Kelly v. Southern Pacific Co.*, 419 U.S. 318, 322 (1974). The failure to do so was substantial clear error.

The Court of Appeals for the Federal Circuit has acknowledged that when a trial court incorrectly applies a rule of law and thus fails to make appropriate findings of fact or does not properly provide the grounds for an exercise of judicial discretion, "an appellate court will normally remand for further proceedings in order to permit the district court to make the missing findings." *Seattle Box Co. v. Industrial Carting & Packing, Inc.*, 756 F.2d 1574, 1577 (Fed. Cir. 1985). However, in the present case no such remand was made and the court of appeals made its own findings of fact *de novo*. This again was substantial clear error.

5. The Court of Appeals Has So Far Departed From [illegible]pted And Usual Practice As To Require An Exe[illegible]e Of This Court's Power Of Supervision

A. Burden of Proof

By its decision, which points to the accused party as the one having a burden of proof of non-equivalency in means-plus-function claim situations, the court of appeals has created confusion to both trial court judges and to trial counsel in infringement actions. This Court should write an opinion making it clear that in all actions for infringement of patents—including means-plus-function claims cases—it is the *patentee* that must offer the evidence of the design of the thing or method accused of infringement, and the *patentee* must offer evidence of equivalency when equivalency is invoked by the patentee.

B. Fact Finding

The court of appeals should be told by this Court that fact finding is the province of the trial court, and that the courts of appeals are only to *review* facts found below to determine if the findings are clearly erroneous and not make any such findings of fact *de novo*.

The court of appeals particularly should be instructed that where the party with the burden of proof on a given issue admits that it did not offer evidence on the subject, and where the trial court makes no finding of fact on the subject, the court of appeals should not undertake to make the finding *de novo* as the court erroneously did here.

CONCLUSION

This Court should grant this petition and in due course order the court of appeals to reverse the district court's holding that the '153 patent was infringed.

Respectfully submitted,

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Dated December 13, 1985

SERVICE

Three copies of this petition and Appendix have been served on counsel of record for King Instrument Corp. by first class mail, postage prepaid, this 13th day of December, 1985.

ALLEN KIRKPATRICK III

APPENDIX

APPENDIX ITEM A

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

No. C-80-3605-WAI

KING INSTRUMENT CORPORATION,

Plaintiff,

v.

OTARI CORPORATION,

Defendant.

FILED

April 17, 1984

FINDINGS OF FACT

1. Plaintiff King Instrument Corporation is a corporation duly organized and existing under the laws of the state of Delaware and has its principal place of business in Westboro, Massachusetts.

2. Defendant Otari Corporation is a corporation duly organized and existing under the laws of the state of California, and has its principal place of business in Belmont, California.

3. Plaintiff is the owner of record of United States Patents Nos. 3,637,153 and 3,737,358.

4. This court has jurisdiction of this cause under 28 U.S.C. § 1338(a); venue is proper under 28 U.S.C. § 1400(b).

5. Plaintiff alleges that defendant has infringed upon plaintiff's patents No. 3,637,153 (the '153 patent) and No. 3,737,358 (the '358 patent), because of defendant's use and sale of Otari tape winding machines, designated DP-6750, DP-2700, VL-100, VL-120/VTW-120, VL-500, VL-600, VL-110, and 37M magnetic tape loading machine.

6. By its counterclaim, defendant alleges that the '153 and '358 patents are invalid under 35 U.S.C. § 102 and 103.

7. The patents at issue claim a method and apparatus for the winding of magnetic tape (either blank or prerecorded) into closed cassettes.

8. The method and apparatus claimed by plaintiff concern the loading of closed cassettes within which are mounted two winding hubs with use tape spliced at each end to leader tape which is attached to each of the hubs. To accomplish that result, a sequence of "cut shift splice—wind—cut shift splice" is described in the claims. The sequential process involves a means of manipulating the use and leader tapes in such a fashion as to accomplish the "cut shift splice—wind—cut shift splice" sequence. In order to so manipulate the tape, the use tape must be juxtaposed to the leader tape in such a manner as to permit the splicing of the two and the subsequent winding of the tapes so spliced for a predetermined length of tape and an ultimate further juxtaposition and splicing of use tape to leader tape on the other hub.

9. The device claimed to embody the '153 patent utilized a mechanical splicing block configuration which employed swinging arms to manipulate the use tape in and out of juxtaposition with the leader tape.

10. The device alleged to embody the claims of the '358 patent utilized a mechanism for positioning tape

sections through a horizontal splicing block movement rather than with the swinging arm movement.

11. The '153 patent was aptly characterized in trial as a "genus" invention, and the '358 patent as a "species" improvement. (Testimony of Zimmerman, TR p. 2291.)

12. Defendant Otari Corporation has received, held in inventory, assembled and sold tape loading machines bearing Otari model designations: DP-6750 (DP-6755), DP-2700, VL-100, VL-120/VTW-120, VL-500, VL-600, VL-110 and 37M.

13. DP-6750 machine of defendant Otari Company was offered for sale and sold by defendant Otari Corporation in the United States. That machine except for one minor particular (the cutting out of the Q signal) is a substantial copy of the machine embodying the '153 patent of plaintiff.

14. The machines marketed and sold by defendant Otari Corporation under the designations DP-2700, VL-100, VL-120/VTW-120, VL-500 and VL-600 are substantially identical in configuration and operation to the machine embodying the '358 patent of plaintiff.

15. The most probative evidence is that the '153 patent is neither anticipated by nor obvious over the Ooms article, *J. L. Ooms Journal of the Audio Engineering Society*, October 1966, Vol. 14, pp. 343–355, the Philips machine, or Plastaras and Coleman patent. (Testimony of Zimmerman; testimony of Isam).

16. Machines made in accordance with the '153 patent were sold prior to May 27, 1970. The machines embodying the '153 patent are prior art to the '358 patent. (Testimony of Zimmerman, TR p. 2294.)

17. The Otari machines DP-6750, DP-2700, VL-100, VL-500 and VL-600 directly infringe claims 2, 4, 5, 6, 8, 9, 10, 11, 12, 14 and 16 of the '153 patent.

18. The Otari machine VL-100 directly infringes claims 2, 4, 5, 6, 8, 9, 10, 11, 12, and 14 of the '153 patent.

19. Plaintiff is not estopped to assert that the claims of the '153 patent read on the shift-block apparatus by the file wrapper history of the '153 patent.

20. Plaintiff is not estopped to assert that the claims of the '153 patent read on the shift-block apparatus by anything appearing in the file wrapper history of the '358 patent.

21. The evidence does not support the contention that Gelardi was an inventor or co-inventor of the cassette loading process described in the '153 patent.

22. The evidence does not support the contention that plaintiff committed a fraud on the patent office by failing to disclose the article, *supra*, or the machine embodying some of the concepts set forth in that article referred to in trial as the Philips machine (Exhibit 141).

23. The most relevant prior art to the '153 patent is the Ooms article, the Philips machine, and the processes for tape winding set forth in the preamble to the '153 patent.

24. The invention of the '153 patent is not anticipated by the relevant prior art.

25. The standard of one ordinarily skilled in the art of tape within the meaning of 35 U.S.C. § 103 is:

> A person probably having at least a bachelor's degree in mechanical engineering with some knowledge of machine design and some experience with the handling of tape. It should or would be a graduate mechanical engineer, with at least two year's experience in machine design and tape handling design.

(Testimony of Zimmerman; testimony of Foster.)

26. The differences between the prior art as above designated and the subject matter patented in the '153 patent, taking the subject matter as a whole, are not such as would have been obvious to one ordinarily skilled in the art of tape winding in 1969.

27. The '153 patent is valid.

28. The '153 patent is infringed by the Otari machines.

29. Each of machines manufactured by plaintiff following the issuance of the '153 patent has been marked with the patent number. (King TR: 302, 303.)

30. Plaintiff is entitled to its lost profits with respect to the sale by Otari of its machines DP-6750, DP-2700, VL-100, VL-500, VL-600, in the United States.

31. In reaching the amount of damages to which plaintiff is entitled, the court considers the following:

(1) The amount or number of lost sales.

(2) The gross receipts plaintiff would have obtained from the lost sales had there been no infringement.

(3) The cost of sales to be deducted from gross receipts.

(4) Plaintiff's profit on the lost sales.

32. On the basis of plaintiff's audited financial statements introduced as exhibits by plaintiff (PX 215, 216 and 217) the court establishes King's gross profit percentage in the indicated accounting period as follows:

Year	Profit Percentage
1977	58.9%
1978	60.8%
1979	59.0%

33. The number of sales of the infringing machines within the six-year period immediately preceding the commencement of this action is:

VL100	19 machines
VL500	85 machines
VL600	33 machines
DP2700	91 machines
DP6755	3 machines

34. The gross revenue which would have been received by plaintiff if it had made the sales set forth in finding 32 is $3,667,135.

35. The lost profits incurred by plaintiff by reason of the sale of the infringing machines is $2,184,959.

36. The lost profits from the sale of parts incurred by plaintiff is $438,810.

37. Plaintiff is entitled to pre-judgment interest on the foregoing sums at the rate provided by California law.

38. Plaintiff is entitled to post-judgment interest at the rate provided by 28 U.S.C. § 1961(a).

39. The facts do not justify the trebling of damages.

40. The court makes no award for a royalty based upon unsold infringing devices held in inventory by defendant.

41. The court makes no award of attorneys' fees, finding that such an award is not justified under 35 U.S.C. § 285.

42. A device embodying the claims of the '358 patent was on sale prior to May 27, 1970. (Testimony of Robert H. Hunt; defendant's Exhibits 86L, 86M, 86N, 86P, 86Q, 86R.)

43. The testimony of Robert H. Hunt, and the effect of the exhibits relied upon by him, constitutes clear and convincing evidence. (Defendant's Exhibit 35; King deposition, Apr. 20, 1983, p. 37, 11. 1-5.)

44. James King, Sr., testified that he had the horizontal shift blocks on April 27, 1970. (Tr. p. 479, 11. 1-3; King deposition of January 7, 1982, p. 400, 11. 2-4.) That testimony supports the notion that the horizontal shift block machine embodying the concepts of the '358 patent was reduced to practice by April 27, 1970, and was in existence and reduced to practice prior to May 22, 1970, when it was offered for sale to the Morningstar Division of Data Packaging Company.

45.. It was the custom and practice at King Instrument Corporation to make sales of machines prior to the completion of drawings and before a program drawing was prepared. At page 209 of the transcript, 11. 6-10, James King, Sr., testified as follows: "Yeh. Basically, the machines—the first machine sold would be sold prior to completed drawings and instruction manuals. These drawings were more accurately prepared for the construction of an instruction manual."

46. The assembly drawing of the horizontal shift block machine, depicted in defendant's Exhibit 35, was prepared on May 16, 1970. (Testimony of James King, Sr., p. 478, 11. 4-10.)

47. It was the custom and practice of King Instrument Corporation to have assembly drawings such as those depicted in defendant's Exhibits 19A-G and 19A-H prepared from a completely assembled machine. (Testimony of James King, Sr., transcript p. 463, 11. 4-16.) A preponderance of the evidence favors the contention that machines embodying the concept of the '358 patents were on sale to the Morningstar

Division of Data Packaging Company and reduced to practice on May 22, 1970, five days before the critical date.

48. James King, Sr., testified "I don't recall showing the prototype to any customers. We were—I think we went from prototype to manufacture very quickly in order to maintain our market, because the customers, by that time, most of the machines were becoming worn, and ninety percent of them were calling up with this misalignment problem. So we went into immediate change out of necessity, of the front panel of the machine, putting in these new horizontal movement shift blocks simultaneously with executing a program of refit of existing machines that were previously sold to customers." (Testimony of James King, Sr., TR p. 431, 11. 12-23.)

49. Clear and convincing evidence favors the contention that a machine embodying the concept of the '358 patent was on sale to the Morningstar Division of Data Packaging Co., and reduced to practice on May 22, 1970, five days before the critical date.

50. There is no clear and convincing proof of offer for sale or sale prior to May 27, 1970, of machines embodying the concept of the '358 patent to CBS Soundcraft or to Data Technology.

CONCLUSIONS OF LAW

1. This court has jurisdiction of the parties and of the subject matter.

2. United States Letters Patent No. 3,637,153 is valid.

3. United States Letters Patent No. 3,637,153 is not anticipated by the prior art under 35 U.S.C. §102.

4. United States Letters Patent No. 3,637,153 are not obvious in light of the prior art to one reasonably skilled in the art. 35 U.S.C. § 103.

5. United States Letters Patent No. 3,637,153 are enforceable.

6. United States Letters Patent No. 3,637,153 are infringed by Otari machines DP-6750, DP-2700, VL-100, VL-500 and VL-600.

7. Plaintiff is entitled to damages on the lost profits resulting from loss of sales and for loss of sales of parts in a total sum of $2,523,769.

8. Plaintiff is entitled to pre-judgment interest on the foregoing sum in an amount equal to the annual rate of interest applicable to judgments under California law.

9. Plaintiff is entitled to post-judgment interest upon the foregoing sum at the rate provided by 28 U.S.C. §1961(a).

10. Defendant is enjoined and restrained from further sale of infringing machines DP-6750, DP-2700, VL-100, VL-500 and VL-600.

11. Plaintiff is not entitled to enhancement of its damages under 35 U.S.C. § 284.

12. Plaintiff is not entitled to recover attorneys' fees.

13. United States Letters Patent No. 3,737,358 is invalid because it was reduced to practice and on sale prior to the critical date of May 27, 1970, 35 U.S.C. § 102, and defendant is to that extent entitled to judgment on its counterclaim.

14. Except as to its on sale defense, defendant is denied recovery on its counterclaim.

15. Defendant is not entitled to recover attorneys' fees on its counterclaim.

16. Each side shall bear its own costs.

DATED: 4 17 84

WILLIAM A. INGRAM
United States District Judge

APPENDIX ITEM B

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

No. C-80-3605-WAI

KING INSTRUMENT CORPORATION,
Plaintiff,

v.

OTARI CORPORATION,
Defendant.

FILED
July 3, 1984

ORDER

Plaintiff's motion for leave to file supplemental complaint for patent infringement is GRANTED.

Plaintiff's motion for entry of judgment and for a permanent injunction is GRANTED.

Defendant's motion for order lifting stay of proceedings on the anti-trust and patent misuse counterclaims is GRANTED.

The Findings of Fact and Conclusions of Law filed herein on April 17, 1984, are amended as follows:

Finding Number 7. Change "method" to "system."

Finding Number 8. Change "method" to "system."

Finding Number 15. Change "Isam" to "Isom."

Finding Number 17. Delete "VL-100."

Finding Number 18. The Otari machines VL-100, VL-110, and VTW-120 directly infringe claims 2, 4, 5, 6, 8, 9, 10, 11, 12 and 14 of the '153 patent.

Finding Number 21. Change "process" to "system of apparatus."

Finding Number 34. Change $3,667,135 to $3,831,685.

Finding Number 35. Change $2,184,959 to $2,282,535.

Conclusion Number 7. Change $2,253,769 to $2,721,345.

Conclusion Number 14. Change to read as follows:

"Except as to its on sale defense, defendant is denied recovery on its counterclaims filed October 27, 1980."

DATED: 7 3 84

WILLIAM A. INGRAM
United States District Judge

APPENDIX ITEM C

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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

CIVIL ACTION
No. C-80-3605 WAI

KING INSTRUMENT CORPORATION,
Plaintiff.

v.

OTARI CORPORATION
Defendant.

FILED
July 16, 1984

JUDGMENT

This action having come before the Court, Honorable William A. Ingram, United States District Judge, presiding, and the issues having been duly presented and a decision having been duly rendered by an Order filed herein,

It is ordered, adjudged and decreed, as follows:

A. Plaintiff's '153 patent being valid and infringed, Plaintiff shall recover of the Defendant:

1. Its lost profits incurred by virtue of the sale of machines infringing Plaintiff's '153 patent in amount of $2,282,535.

2. Its lost profits incurred from the sale of spare parts in the amount of $438,810.

3. Prejudgment interest on the foregoing sums at the rate provided by California law in the amount of $680,759.

4. Plaintiff is entitled to post-judgment interest on the foregoing sums at the rate provided by 28 U.S.C. §1961(a).

5. Defendant is hereby enjoined and restrained from making, using, offering for sale and further sale of infringing machines identified as DP-6750, DP-2700, VL-100, VL-110, VTW-120, VL-500 and VL-600, or the equivalents thereof, and including spare parts therefor.

B. Plaintiff's '358 patent is invalid. and for this reason is not infringed.

DATED: 7 13 84

WILLIAM A. INGRAM
United States District Judge

APPENDIX ITEM D

KING INSTRUMENT CORPORATION,
Plaintiff-Appellant/Cross-Appellee,
v.

OTARI CORPORATION,
Defendant-Appellee/Cross-Appellant.

Appeal Nos. 84-1528, 84-1529, 84-1558 and 84-1595.

UNITED STATES COURT OF APPEALS,
FEDERAL CIRCUIT.

June 26, 1985.

Owner of patents relating to automated machine for loading magnetic audio or video tape into closed cassettes brought infringement action. The United States District Court for the Northern District of California, William A. Ingram, J., held that patent on "shift lock" machine was invalid and that patent on "swing arm" machine was valid and infringed, and awarded damages to patent owner, and both sides appealed. The Court of Appeals, Davis, Circuit Judge, held that: (1) patent on "swing arm" machine was not invalid for obviousness; (2) patent for "shift lock" machine was invalid as having been "on sale" more than one year prior to date of application for patent; (3) patent on "swing arm" machine was infringed; (4) award of over $2.2 million for lost profits arising from infringement was proper; (5) patent owner was not entitled to award of damages for loss of sales of spare parts; and (6) patent owner was not entitled to increased damages or attorney fees for alleged willfulness of infringement.

Affirmed in part, vacated and remanded in part.

Elmer S. Albritton, Flehr, Hohbach, Text, Albritton & Herbert, of San Francisco, Cal., argued for plaintiff-appellant/cross-appellee. With him on the brief were Donald N. MacIntosh and William A. Cammett; Nicholas A. Pandiscio, Schiller & Pandiscio, of Waltham, Mass., was on the brief, of counsel.

Allen Kirkpatrick, Cushman, Darby & Cushman, of Washington, D.C., argued for defendant-appellee/cross-appellant. With him on the brief were George C. Limbach, Limbach, Limbach & Sutton, of San Francisco, Cal., Henry Y. Ota, Shigeru Watanabe, Kelley, Drye & Warren, of Los Angeles, Cal. and C. Michael Zimmerman, Cushman, Darby & Cushman, of Palo Alto,, Cal.

Before MARKEY, Chief Judge, DAVIS, Circuit Judge, and SKELTON, Senior Circuit Judge.

DAVIS, Circuit Judge.

King Instrument Corporation (King), the plaintiff below, charged Otari Corporation (Otari) with infringement of its U.S. Patent Nos. 3,637,153 ('153) issued January 25, 1972, and 3,737,358 ('358) issued June 5, 1973. King now appeals from final judgment by the United States District Court for the Northern District of California, following a bench trial, that held the '358 patent invalid because the invention claimed was found to be "on sale" under 35 U.S.C. § 102(b). We affirm.

Otari cross-appeals from the district court's holding that the '153 patent is valid and infringed, and that King is entitled to lost profits incurred from the sale of Otari's infringing devices in the amount of $2,282,935, and lost profits of $438,810 and from the sale of "spare parts." We affirm as to the award

based on the infringing devices, and vacate and remand as to the award based on spare parts. We also affirm the district court's determination that King is not entitled to increased damages relating to Otari's sale of infringing devices.

I.

BACKGROUND

A. The King patents.

The patents at issue relate to an automated apparatus for loading magnetic (blank or pre-recorded audio or video) tape into closed cassettes. Before loading, a closed cassette consists of an outer plastic case containing two winding hubs (spools) and a short length of leader tape wound around each hub. After loading, the finished product has a much longer length of magnetic supply ("use") tape which has been spliced to the leader tape. The patents claim an apparatus for automatically cutting, splicing, and winding magnetic use tape into closed cassettes.

The tape loading machine embodying the invention of the earlier '153 patent came to be known as the "swing arm" machine. For appreciation of the apparatus claims of the '153 patent we describe how the swing arm device works. A new cassette having a short length of leader tape with one end wound about one of the hubs and the other end connected to the other hub is mounted onto a holder in the machine. The leader tape is manually pulled out of the cassette, formed into a loop and then extended over two splicing heads. The start button is pressed setting off the following sequence of operations: first, a knife blade just above the splicing heads is thrust forward slitting the leader tape into two sections each of which is held in place by suction on the two re-

spective splicing heads; as the blade returns to its position, the splicing head supporting one section of the leader tape pivots (swings) counterclockwise and is replaced by a third splicing head supporting the magnetic use tape which pivots into a position that is contiguous with and abuts the stationary splicing head supporting the other section of leader tape; a splicing tape dispenser-applicator then pivots downward and splices one section of the leader tape to the magnetic use tape; the tape is wound at a fast rate onto the right hub to a predetermined length; thereafter, the knife is again activated, slitting the use tape, and all the splicing heads swing back to their original positions; the splicing tape dispenser-applicator then pivots downward to splice together the trailing end of the magnetic use tape and the abutting end of the leader tape; at this time, the operator may pull the spliced tape off the splicing heads and eject the cassette from the holder. Disclosed in the specification, but not specifically claimed, this automated operating sequence has been referred to as "cut, shift, splice—wind—cut, shift, splice."

The device disclosed in the '358 patent has been called a "shift block" machine. The assembly disclosed consists of two splicing blocks. The first block has two tape-receiving grooves, and the second block has one tape-receiving groove. Although using a different mechanism, the unclaimed operating sequence is generally the same as in the swing arm machine. The leader tape lies across both blocks whereupon it is cut into two sections by a knife unit. A means is provided for moving one block relative to the other (*i.e.*, horizontally pulling out one block—"shifting") so as to selectively align the second groove of the first block which supports the use tape with the single groove of the second block which supports one end

of the leader tape. A splicing tape dispenser splices the leader tape and use tape. The tape is wound and then severed at a predetermined length. The block shifts back to its original position, aligning and splicing the wound tape with the other "forgotten" leader end.

B. Otari's devices.

Otari has received, held in inventory, assembled and sold tape loading machines bearing model designations DP-6750, DP-2700, VL-100, VL-120/VTW-120, VL-500, VL-600, VL-110 and 37M. The "VL" designation refers to video, as opposed to audio, tape loading machines. Although no documentary evidence which may have been used below to describe the Otari devices appears in the printed record before this court,[1] the record does contain extensive testimony offered by both parties comparing the VL-600 to the claims of the '153 patent. The witnesses included Harris Zimmerman, King's expert; the deposition testimony of James King, Sr., the patentee of both the '153 and '358 patents; Ernest Chilton, Otari's expert; and Dirks Foster, Otari's expert on patent law.

C. Proceedings below.

After considering over 2,000 pages of trial transcripts, 400 exhibits and the credibility of more than 25 witnesses, the district court entered final judgment. The court concluded that the invention claimed in the '153 patent was neither anticipated under 35 U.S.C. § 102(a), nor would have been obvious under

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[1] In 200 pages of brief and 15 volumes of appendix, the only drawing which appears of any infringing device is a fold-out in Otari's brief describing the sequence of steps of the VL-600. As candidly pointed out by Otari's counsel at oral argument, this aesthetic pictorial was not before the district court. The record below did, however, include video tapes and an extensive manual describing the VL-600 device.

35 U.S.C. § 103. The court found that Otari machines DP-6750, DP-2700, VL-500 and VL-600 directly infringe claims 2, 4, 5, 6, 8, 9, 10, 11, 12, 14 and 16, and Otari machines VL-100, VL-110, and VTW-120 directly infringe claims 2, 4, 5, 6, 8, 9, 10, 11, 12 and 14 of the '153 patent. The court then concluded that King was entitled to its lost profits with respect to the sale by Otari of these machines. The court also awarded damages for lost profits from the sale of "parts" by Otari. Pre-judgment interest was awarded, but enhanced damages for willful infringement and an award of attorney fees were denied.

In holding the '358 shift block patent invalid, the district court found that a device which embodied the claims of the '358 patent and which had been previously reduced to practice was offered for sale to the Morningstar Division of Data Packaging Company (Morningstar) prior to May 27, 1970 (one year prior to the '358 filing date). Except as to its on sale defense, Otari was summarily denied relief on its other counterclaims for invalidity and non-infringement of the '358 patent.

II.

VALIDITY OF THE KING PATENTS

A. The '153 patent.

After considering all the relevant prior art, the district court found that the invention claimed in the '153 patent was not anticipated by the prior art, and also ruled that the differences between the prior art and the claimed subject matter as a whole would not have been obvious to one of ordinary skill in the tape winding art in 1969.[2] Otari argues that the district

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[2]In its brief before this court, Otari has argued only the obviousness issue, and therefore we assume it is no longer contending that the '153 patent is invalid for anticipation.

court committed reversible error by not making detailed findings of fact under the guidelines set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545, 148 USPQ 459 (1966), and by failing to recognize the Plastaras patent as the most relevant prior art.

In a § 103 obviousness analysis, *Graham* requires that the trier assess certain underlying facts: (1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) the so-called "secondary considerations." *See Atlas Powder Co. v. E.I. DuPont De Nemours & Co.*, 750 F.2d 1569, 1574, 224 UPSQ 409, 412 (Fed.Cir.1984). Otari cites *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021 (Fed.Cir.1984) as showing that the district court improperly failed to make express findings relating to these factors. In *Jones*, however, this court reversed the trial court's conclusion of obviousness because the record contained no specific factual findings, no mention of any patented prior art, and was replete with legal error. By comparison, not only did the district court conclude that the '153 patent was nonobvious, but none of the *Jones* "parade of horrors" exists in this case.

During prosecution of the '153 patent, the Patent and Trademark Officer examiner had before him *inter alia*, the Canadian Kilmartin patent. As Otari admits in its brief, Kilmartin relates to butt splicing of tape ends, and has nothing to do with the mechanism involved in cutting, splicing and manipulating tapes so as to insert a length of tape between the ends of two leader tapes.

Before the district court, the prior art offered by Otari consisted of the Ooms article, the Philips machine, and the Plastaras patent (U.S Patent No.

2,794,486). Ooms discloses a system for "multiple speed tape duplicating" such that the ends of the leader tape and trailer (the other end of the severed leader) tape, which were pre-assembled on hubs, are aligned with both ends of the magnetic tape material. Both ends are spliced at two separate stations while the tape is held in place by suction means. All the steps are executed by operator-activated levers.

For the most part, the Philips machine was made in accordance with the Ooms article. As a preliminary step, the leader tape is attached to the two hubs outside the cassette where it is spliced to a supply of magnetic tape which is wound on that hub to a predetermined length. The magnetic tape is cut so that the tail end of the wound tape can be spliced to the leader of the other hub. Using a special hub grabber, these components are placed into one cassette shell-half and then the other cassette shell-half is placed on top.

Another piece of prior art is the Plastaras patent entitled "Method of and Means for Correcting a Phototypographical Film." This invention relates to a manual method for correcting and changing a film on which text has been printed in a phototypographical machine. In making a correction (*i.e.*, removing a line of text) the original film is advanced over a table and fixed by a pair of pins which pass through perforations found on the outer edges of the film. The correction film is advanced to a point chosen by the operator and fixed by another pair of pins. The portion of the original film to be removed (the incorrect line) is severed, leaving the original film in two sections. The original film is then transferred to a welding station where it is welded to the leading edge of the correction film. After transfer back to the cutting station, the welded original and correction films are

severed at the foot of the correct line. The foot of the corrected line is then butt-welded to the original film.

After analyzing the prior art, the district court explicitly found that the most relevant prior art applied against the '153 patent includes the Ooms article and Philips machine, conspicuously omitting the Plastaras patent. Otari insists that the Plastaras patent is the most relevant prior art which, when combined with the above art, renders the '153 patent invalid. We disagree.

In contrast to the minute cassette tape used in a '153 patent machine, the film used in the machine described in Plastaras has a width of 4-6 inches. Moreover, the more cumbersome "Plastaras film" is self-supporting and has perforations along the edges to enable the operator to secure the film by using pins. Otari argues that King's expert Zimmerman testified that he would include methods of splicing photographic film as within the relevant art, and therefore Plastaras is as relevant as any other prior art. But Zimmerman clarified his statement by adding that only photographic film in narrow tape form, not (for example) a 3 by 5 negative, should be considered relevant art. Also, there was testimony that Plastaras is directed to the printing industry and not to the high speed loading of magnetic tape into cassettes. To operate the Plastaras machine, textual film is passed across and clamped to two tables. Careful manual adjustments are required at both the cutting and welding stations. Furthermore, Plastaras taught shifting the two (correction and original) films to four different locations. In the light of all this evidence, one can reasonably conclude that the reference is not within the field of this inventor's endeavor, and was not directly pertinent to the particular problem with

which the inventor was involved. *Accord Union Carbide Corp. v. American Can Co.*, 724 F.2d 1567, 1572, 220 USPQ 584, 588 (Fed.Cir.1984). Thus, the district court's finding that the Plastaras patent was not as relevant as the Ooms article and the Phillips machine was not clearly erroneous.

Otari then asserts that the Ooms article and Phillips machine disclose: how to swing leader tape into alignment with use tape for splicing; how to use suction to place the ends of leaders adjacent to the ends of use tape; and how to use pieces of splicing tape to fasten tape sections together. The testimony established, however, that the Philips machine did not disclose a mechanism for automatically sequencing all the machinery operations necessary for accurately loading magnetic use tape into a cassette with a minimum of operator intervention. Manual operation was required for, *inter alia*, inserting the tape into cassette shell-halves. Therefore, the relevance of Ooms and Philips can be limited to the use of suction to secure magnetic tape during splicing.

Otari also argues that it would have been obvious to one of ordinary skill in the art to combine the Ooms article and Philips machine with the Plastaras patent. Otari has pointed to no testimony in the record by, or related to, one of ordinary skill in the art, nor were we able to find any evidence which suggests the desirability of making such a combination. See *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed.Cir.1985) (nothing of record plainly indicated that it would have been obvious to combine the prior art). Thus, we do not believe that the district court failed to weight properly the scope and content of the prior art, and the differences between the prior art and the claimed invention as a whole.

After finding what constituted the most relevant prior art, the district court also correctly set forth the standard of one of ordinary skill in the art of tape winding:

> A person probably having at least a bachelor's degree in mechanical engineering with some knowledge of machine design and some experience with the handling of tape. It should or would be a graduate mechanical engineer, with at least two years' experience in machine design and tape handling design.

In addition, although the district court did not make an explicit finding relating to secondary considerations as objective indicia of non obviousness, there was significant relevant evidence before the district court. This included testimony showing that the King invention as defined by the claims of the '153 patent caused a profound change in the recording industry. The new King machines allowed cassette loading to advance from a state where production rates were approximately 450 cassettes per operator-day to 5,000 cassettes in a single eight-hour shift.[3]

In the face of conflicting evidence, opinions and argument, the district court concluded that Otari failed to overcome the presumption of validity by clear and convincing evidence. We have reviewed the record and Otari has not convinced us that the district court failed to make the required findings of fact, that those findings were clearly erroneous, or that the district court's ultimate legal conclusion of non-obviousness was erroneous.

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[3]While there was no specific finding of nexus between the evidence of commercial success and the claimed invention, *see Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 F.2d 1573, 1575, 222 USPQ 744, 746 (Fed.Cir.1984), we may properly assume that this evidence entered into the district court's consideration under the correct standard.

B. The '358 patent.

The '358 patent application was filed on May 27, 1971. A tape loading device was offered for sale in a written price quotation on May 22, 1970 to Morningstar. The offer for two "King Turbo-matic 300-EC" cassette loaders contained a description of the specifications for the leader tape, the required power supply, a discount for two of Morningstar's old tape loaders, and a price quotation for a spare automatic splicer. This offer resulted in an acceptance confirmed by a purchase order dated June 8, 1970. The two loaders arrived at Morningstar on June 17, 1970. The district court found that, since the offer embodied the '358 claimed invention which had been reduced to practice by April 27, 1970, the '358 patent was invalid under 35 U.S.C. § 102(b).[4]

King argues that the district court failed to apply the three-part test enunciated in *Timely Products Corp. v. Arron*, 523 F.2d 288, 187 USPQ 257 (2d Cir.1975), which it says this court adopted as the standard for determining "on sale" under § 102(b) in *Barmag Barmer Maschinenfabrik v. Murata Machinery, Ltd.*, 731 F.2d 831, 221 USPQ 561 (Fed.Cir.1984). This three-part test requires that: (1) the complete invention claimed must have been embodied in or obvious in view of the thing offered for sale; (2) the invention must have been tested sufficiently to verify that it is operable and commercially marketable; and (3) the sale must be primarily for profit rather than for experimental purposes. 523 F.2d at 302, 187

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[4]The portion of § 102 pertaining to the "on sale" bar reads:

> A person shall be entitled to a patent unless—
>
> * * *
>
> (b) The invention was . . . on sale in this country, more than one year prior to the date of the application for patent in the United States . . . .

USPQ at 267-268. However, this court expressly held in *Barmag* that *Timely Products* is not adopted for all cases, and a less stringent standard might be appropriate in some circumstances where the underlying statutory policies might otherwise be frustrated. *Accord Western Marine Electronics v. Furano Electric Co.*, 764 F.2d—, 840 (Fed.Cir.1985).

These underlying policies include: (1) discouraging removal of inventions from the public domain which the public justifiably comes to believe are freely available; (2) favoring prompt and widespread disclosure of inventions; (3) giving the inventor a reasonable amount of time following the sales activity to determine the value of a patent, *see In re Caveney*, 761 F.2d 671, 676 (Fed.Cir.1985), and (4) prohibiting an extension of the period for exploiting the invention. Consistent with these policies, the district court properly relied on two factors as evidence of "on sale": (1) a sale or offer of sale of the invention, and (2) an existing reduction to practice of the invention by the time of the offer. *See generally Barmag, supra.* An offer to sell is sufficient under the policies animating the statute, which proscribes not a sale, but a placing "on sale." *D.L. Auld Co. v. Chroma Graphics Corp.*, 714 F.2d 1144, 1147, 219 USPQ 13, 18 (Fed.Cir.1984). Although it argues in the context of *Timely Products*, King's position is essentially that there was never an offer of sale before the critical date, nor was the '358 invention reduced to practice before that date.

To support its position that there was no such offer to sell the '358 invention, King asserts that the alleged offer for sale was phrased in language consistent with that used in concurrent quotations made to other companies for the '153 swing arm machines, not the '358 shift block machines. Moreover, there

was no reference in the offer as to how the machine worked. Other purchasers who received quotations containing the same general performance language could not say specifically which type of machine was being offered for sale. Robert Hunt of Morningstar, who allegedly received the '358 shift block machines in June, 1970, admitted he was "surprised" to receive the new device. The alleged offer becomes even more ambiguous, argues King, when one considers that the earlier swing arm and later shift block machines were both referred to as a "King Turbomatic Cassette Loader 300 EC". It is said, therefore, that no intent existed to make such an offer, nothing in the offer identified the subject matter of the invention, and no notice was given to the purchaser that a new or different machine existed.

While a bare, unexplained offer, not explicitly shown to be of the new invention, may be insufficient, the totality of the circumstances must always be considered in order to ascertain whether an offer of the new invention was in fact made. *Accord Barmag, supra.* When an executory sales contract is entered into (or offered) before the critical date. the purchaser must know how the invention embodied in the offer will perform. *See In re Dybel,* 524 F.2d 1393, 1400, 187 USPQ 593, 598 (CCPA 1975). The policies underlying the on sale bar, however, concentrate on the attempt by the inventor to exploit his invention, not whether the potential purchaser was cognizant of the invention. Accordingly, the purchaser need not have actual knowledge of the invention for it to be on sale. *In re Blaisdell,* 242 F.2d 779, 783, 44 CCPA 846, 850, 113 USPQ 289, 292 (1957). In this case, from the descriptions contained in the quotation (*e.g.*, "The loader measures tape in one foot increments from 2 feet to 999 feet"), the purchaser generally knew how

the machine would perform. King's argument that nothing in the quotation distinguishes the offer from any other offer for a swing arm machine is inaccurate. Comparison of the Morningstar quotation to those made to other companies reveals that only the offer to Morningstar included a 40% allowance for old machines. Although this distinction does not establish the existence of an offer to replace old swing arm machines with a "new" type of machine, such a possibility is another factor for the trier to consider.

As evidence that no offer was made before the critical date, King also argues that Morningstar did not receive two shift block machines in June 1970, but in fact received two swing arm machines embodying the invention claimed in the '153 patent. However, Hunt of Morningstar was convinced that the two machines received on June 17, 1970 were horizontal shift block machines. Review of Hunt's testimony shows that he was continuously connected with the cassette winding operation during this period of time. His unbiased live testimony is a sufficient basis for the district court to have concluded that the machines received embodied the '358 shift block invention.[5] The fact that Morningstar received two shift block machines is further support that the earlier ambiguous offer made on May 22, 1970 was in fact for shift block machines.

Even if there was an offer, King argues that the '358 invention was not reduced to practice before the critical date. The district court's conclusion that the invention was reduced to practice was based on the following findings of fact: (1) James King, Sr. testified that he had horizontal shift blocks on April 27, 1970;

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[5]As King itself points out, why else would Hunt testify that he was "surprised" when he received machines with shift blocks.

(2) it was the custom at King to make sales of machines prior to the completion of drawings; (3) the assembly drawing of the '358 horizontal shift block device was prepared on May 16, 1970; and (4) it was the custom and practice of King to have assembly drawings prepared from an existing assembled machine. King responds by citing *McDonnell Douglas Corp. v. United States,* 670 F.2d 156, 214 USPQ 857 (Ct.Cl.1982), for the proposition that the mere existence of assembly drawings does not by itself establish a reduction to practice, and that reduction to practice usually requires at least a testing of the invention. We do not disagree. However, in *McDonnell,* all that the Court of Claims found was that the invention was not reduced to practice by computer simulation because physical tests revealed possible non-operability under certain conditions. That is not the situation in the instant case, and the district court found an actual reduction to practice.

Our predecessor court has recognized that the invention must have been "sufficiently tested to demonstrate that it will work for its intended purpose." *General Electric Co. v. United States,* 654 F.2d 55, 60, n. 8, 228 Ct.Cl. 192, 201, n. 8, 211 USPQ 867, 872, n. 8 (1981). But, in order for there to be a reduction to practice, there is no requirement that the invention when tested be in a commercially satisfactory stage of development. *Barmag, supra,*731 F.2d at 838, 221 USPQ at 567. Moreover, the district court might have considered that "[s]ome devices are so simple and their purpose and efficacy so obvious that their complete construction is sufficient to demonstrate workability." *Eastern Rotorcraft Corp. v. United States,* 384 F.2d 429, 431, 181 Ct.Cl. 299, 305, 155 USPQ 729, 730 (1967). Here, testimony and other evidence supports the district court's finding that King

prepared assembly drawings from a completed and workable device. Accordingly, the district court did not err in inferring that the '358 invention embodied in an existing machine was sufficiently tested to constitute a reduction to practice. Rather, we are pursuaded that the district court's conclusion that the '358 patent in invalid as being "on sale" under § 102(b) is supported by clear and convincing evidence.[6]

III.

INFRINGEMENT OF THE '153 PATENT

The district court ruled that the Otari machines directly infringe the claims of the '153 patent. Otari asserts that this was erroneous because the '153 patent claims consist of "means plus function" language which require a finding (not specifically made here) of equivalency between the accused machines and what is described in the '153 patent specification. This court passes on judgments not opinions. Therefore, we review the record in order to determine whether there is, under the proper standard, a preponderance of evidence supporting the district court's finding of infringement.

As always in an infringement analysis, we start by looking to the language of the claims of the '153 patent. The most relevant portions of the claim language in issue are the "means plus function" clauses. Those means clauses appearing in claim 2 are illustrative:

> Apparatus for severing a leader tape that is attached at its opposite ends to two hubs into two lead-

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[6]Because of this holding sustaining the on sale bar, we do not address Otari's appeal with respect to other channels of attack on the '358 patent, *e.g.*, anticipation, obviousness, other on sale defenses, noninfringement. Nor do we consider King's appeal relating to infringement of the '358 patent and increased damages for such infringement.

> ers and for splicing said leaders to the opposite ends of a length of use tape obtained from a supply roll of said use tape, said apparatus comprising:
>
> a splicing station comprising a first stationary tape support member and second and third moveable tape support members;
>
> *means for alternatively shifting said second and third support members . . .*;
>
> a knife operable to slit tape supported on said first and second splicing heads;
>
> *means for holding said supply roll of use tape . . .*;
>
> selectively operable third tape-holding *means . . .*;
>
> selectively operable tape applicator *means . . .*;
>
> selectively operable tape-winding *means . . .*;
>
> *control means* for sequentially operating the foregoing means . . . . (Emphasis added.)

The corresponding structure disclosed in the specification of the '153 patent comprises the previously described swing arm device.

Construction of the scope of these claims must be made in the context of the last paragraph of 35 U.S.C. § 112, which states:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material or acts described in the specification and *equivalents thereof.* (Emphasis added.)

This court has recently reiterated that this section expressly calls for claim construction covering equivalents of the described embodiments. *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 974 (Fed.Cir.1985); *see also D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 225 USPQ

236 (Fed.Cir.1985). The scope of such equivalents is a question of fact, and once the accused device is found to be an equivalent under § 112 then literal infringement has properly been established. *See Palumbo, supra.* As an aid for ascertaining the breadth of equivalents under § 112, a number of factors may be considered: the patent specification, the prosecution history of the patent, other claims in the patent, and expert testimony. *Palumbo, supra,* at 974. In looking to the first three factors, Otari has not cited any reason or basis in the record for limiting the '153 means claims to the swing arm embodiment.

The fourth important factor in the determination of these equivalents is the testimony of one skilled in the art. In the current case, there is significant evidence drawn from expert testimony which supports the conclusion that the Otari devices are § 112 equivalents of the described embodiment. This includes uncontested testimony based on observations made from video tapes of the Otari machines by Mr. Zimmerman who testified that claims 2, 4-6, 8-12, and 14-16 are directly infringed by the Otari machines. We believe that this testimony is sufficient for the district court to have concluded that Otari's machines are § 112 equivalents, and therefore literally infringe the '153 patent. Otari has failed to point out why Zimmerman's conclusions were wrong, has failed to describe its machines to this court[7], and has failed to meet its ultimate burden of convincing this court that the district court's finding of infringement was clearly erroneous.

IV.

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[7]As we pointed out in note 1, *supra*, the pictorial essay was not before the district court, and therefore cannot be used as a basis for holding that the district court's finding was clearly erroneous.

DAMAGES

A. Compensatory damages for infringement of the '153 patent.

The district court has discretion in choosing the methodology for assessing and computing damages. The limitation on the court's discretion is that the award must be "adequate to compensate for the infringement," and cannot be "less than a reasonable royalty." 35 U.S.C. § 284; *Seattle Box Co. v. Industrial Crating and Packing, Inc.*, 756 F.2d 1574, 1581, 225 USPQ 357, 363 (Fed.Cir.1985). It is Otari's burden, as appellant, to show that the amount or method of assessing damages constituted an abuse of discretion by the district court.

In ascertaining the amount of damages, the court properly set forth and considered the following factors: the "amount or number of lost sales"; the "gross receipts plaintiff would have obtained from the lost sales had there been no infringement"; the "cost of sales to be deducted from gross receipts"; and King's "profit on the lost sales." On the basis of King's audited financial statements, the court found King's representative gross profit percentage to be 58.9% in 1977, 60.8% in 1978, and 59.0% in 1979. The number of sales of the infringing machines was determined to be 19 VL-100 machines, 85 VL-500 machines, 33 VL-600 machines, 91 DP-2700 machines and 3 DP-6755 machines. King's gross revenue which would have been received from sale of these machines was $3,831,685, and, by applying the gross profit percentages, lost profits were calculated to be $2,282,535. Otari asserts that this amount is erroneous because (1) there was no showing of causation, *i.e.*, King would not have made the sales, and (2) the calculation of damages was improper.

In general, the determination of a damage award is not an exact science. The trial court must best approximate the amount to which the patent owner is entitled. *Paper Converting Machine Co. v. Magna-Graphics Corp.*, 745 F.2d 11, 22, 223 USPQ 591, 599 (Fed.Cir.1984).[8] When a patent owner would have made the sale of a product "but for" the infringement, the award based on his lost profits is appropriate. *Paper Converting Machine Co.*, 745 F.2d at 21, 223 USPQ at 598; *Bio-Rad Laboratories, Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 616, 222 USPQ 654, 663 (Fed.Cir.), *cert. denied*, —U.S.—, 105 S.Ct. 516, 83 L.Ed.2d 405 (1984). Generally, as the parties agree, a lost profits award requires (1) a showing that the patent owner would have made the sale but for the infringement, *i.e.*, causation existed, and (2) proper evidence of the computation on the loss of profits. *Id.*

The patent owner's burden of proof is not absolute, but one of reasonable probability. This proposition is exemplified in the recent opinion of this court in *Kori Corp. v. Wilco Marsh Buggies and Draglines, Inc.*, 761 F.2d 649 (Fed.Cir.1985). In *Kori*,, we held that the district court's use of an infringer's profit margin for comparison purposes in determining the reasonableness of a patent owner's estimate of lost profits did not constitute an abuse of discretion. The bottom line is that the trial court must be afforded reasonable flexibility in awarding lost profit damages.[9]

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[8]At oral argument before this court, when counsel for Otari was asked if the damage award approximated what King would have received from Otari in the first place, he responded in the affirmative.

[9]Otari cites *Central Soya v. George Hormel & Co.*, 723 F.2d 1573, 220 USPQ 490 (Fed.Cir.1983) for the proposition that this court has adopted the particular standard for lost profits set forth in *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152, 197 USPQ

Otari alleges here that King failed to carry the burden of proving causation. More specifically, Otari says that any King machines that may have been "equivalent" to Otari's infringing machines were not in production until 1982, long after the period of accounting used by the district court to calculate damages. Thus, King could not have made the sales made by Otari. Otari states, also, that King would not have sold any of its machines to Minnesota Mining & Manufacturing Company which purchased the vast bulk of the accused Otari machines.

As we have said, King need not prove causation as a certainty. Evidence which shows a reasonable probability that King would have made the infringing sales made by Otari will suffice. *See Bio-Rad, supra*, 739 F.2d at 616, 222 USPQ at 663. There was evidence that at the time of Otari's infringing activities, King was Otari's main competitor and the only other company capable of manufacturing under the claims of the '153 patent. This capability was demonstrated by the later development and sale of the King Model No. 590 in-cassette video winder and loader. King need not meet the impossible burden of negating every possibility that a purchaser might not have bought another product or might not have bought any comparable product at all. *See Gyromat, supra* 735 F.2d, 554, 222 UPSQ at 7. The district court heard extensive and relevant testimony from both sides, naturally weighing and assessing the credibility of such testimony. On this record, we cannot say that the district

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726 (6th Cir.1978). The four part test in *Panduit* has been approved by this court as one method of calculating lost profits. *See Gyromat Corp. v. Champion Spark Plug Co.*, 735 F.2d 549, 552, 222 USPQ 4, 6 (Fed.Cir.1984); *see also Bio-Rad, supra*, 739 F.2d at 616 n., 222 USPQ at 663 n. These cases recognize that *Panduit* is, however, not the exclusive test.

court was clearly erroneous in its implicit[10] determination of causation.

Apart from the issue of causation, Otari urges that the district court's damage calculation was clearly erroneous. Since the bulk of lost sales occurred in the 1980's when King was manufacturing an equivalent machine to the Otari machines, Otari states that the earlier 1970's gross profit percentages should not have been used as the base to compute damages. King retorts that Otari is essentially requesting mitigation of damages caused by its own infringement. There is evidence that during Otari's infringement in the 1980's, sales by King were artificially depressed, thereby depressing King's profit margin. Otari should not benefit for being a better infringer in the 1980's than in the 1970's. Under controlling principles of equity, any risk of uncertainty must be cast upon the wrongdoer rather than upon the injured party. *See Kori, supra*, at 655. Moreover, the use of the patent owner's profit margin, unaffected by the infringing sales, is necessary to estimate what the patent owner's lost profits would have been had there never been an infringement. Thus, the use of the profit margin obtained from the 1970's is a relevant basis for approximating King's lost profits.

Otari also assails the profit margin level applied by the district court as exceptionally high and unreasonable on its face. But Otari failed below to controvert evidence of King's gross profit percentages which were set forth in financial statements. Therefore, we

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[10] Otari contends that the district court improperly failed to make an explicit finding of causation. In light of the factors the district court set forth at the outset, *see supra*, and the significant evidence of causation, we judge that the district court understood the requirement of causation and that such a finding naturally flows from the district court's ultimate findings.

cannot conclude that the profit margin used by the district court is clearly erroneous or that the size of the overall award for lost profits is too speculative or constitutes an abuse of discretion

B. Damages for spare parts.

Otari also assigns error in the district court's award of damages based on spare parts. We hold that the evidence found in the present record is insufficient to support the district court's conclusory finding that "[t]he lost profits from the sale of parts incurred by plaintiff is $438,810."

King asserts that it presented evidence at the trial that the proportion of spare parts sold with respect to tape loading machines was generally 20% of the machine's cost. This evidence, based on the direct testimony by King's Vice President and Sales Manager, Cline, is revealing for what it fails to state:

> Q: (By Mr. Albritton) I think you also testified that spare parts sales by your company normally ran at about twenty percent of gross.
>
> A: That's the average, yes, sir.
>
> Q: So if you were to take twenty percent of $2,358,275 [sic], what would you get for spare parts?
>
> A: $471,655 [sic]

This is the only testimony pertaining to spare parts that we were able to find—King did not cite nor were we able to find the antecedent testimony referred to by Mr. Albritton. The sole documentary evidence which we found (without the aid of the parties) appeared in the May 22, 1970 offer from King to Morningstar. Item 2 in the description in that offer consisted of a

> Spare automatic splicer for quick replacement when splicer on machine needs sharpening or over haul. Recommend 1 spare automatic splicer each three loaders.

The price quoted for the spare splicer was $490, while the price for the overall King Turbo-matic loader was $6,995. In light of the recommendation of one spare splicer per three machines, the spare part sale embodied in the Morningstar offer constitutes less than 2½ of the gross (for the three machines).

The "entire market value" rule allows for the recovery of damages based on the value of an entire apparatus including non-patented parts, even though only one of the features in the apparatus is patented. *Paper Converting Machine Co. v. Magna Graphics Corp.*, 745 F.2d 11, 22, 223 USPQ 591, 599 (Fed.Cir.1984). This court has recognized that under this rule, "it is 'the financial and marketing dependence on the patented item under standard marketing procedures' which determines whether the non-patented features of a machine should be included in calculating compensation for infringement." *Kori, supra,* at 656 (citing *Leesona Corp. v. United States,* 599 F.2d 958, 974, 202 USPQ 424, 439 (Ct.Cl.), *cert. denied,* 444 U.S. 991, 100 S.Ct. 522, 62 L.Ed.2d 420 (1979). The controlling touchstone in determining whether to include the non-patented spare part in a damage award is whether the patentee can normally anticipate the sale of the non-patented component together with the sale of the patented components. *Kori, supra,* at 656; *Paper Converting,* 745 F.2d at 223 USPQ at 599; and *Tektronix, Inc. v. United States,* 552 F.2d 343, 351, 193 USPQ 385, 393 (Ct.Cl.1977).

As support for the district court's finding, King asserts that its spare parts are not consumable supplies for which no recovery is possible, but are parts which it normally sells with the patented swing arm machine. Such a simplistic outlook fails to perceive the underlying significance of the entire market value

rule, which was accurately applied by one of our predecessor courts in *Leesona Corp. v. United States, supra.* In defining those spare parts for which a patent owner may recover, the Court of Claims recognized that parts for such items that experience had shown might be destroyed during the normal use of a device should be distinguished from parts which derive their existence and value from the patent. 559 F.2d at 974, 202 USPQ at 439. "(A)fter a patentee has collected from . . . a direct infringer damages sufficient to put him in the position he would have occupied had there been no infringement, he cannot thereafter collect actual damages from a person liable only for contributing [*i.e.*, by the sale of spare parts] to the same infringement" *Aro Mfg. Co. v. Convertible Top Co.*, 377 U.S. 476, 512, 84 S.Ct. 1526, 1545, 12 L.Ed.2d 457, 141 USPQ 681, 696 (1964) (*Aro II*). The only recoverable position the patent owner would have occupied had there been no infringement is one where he normally would have anticipated the sale of the spare parts. In other words, the question is whether King would have made the sale of spare parts but for Otari's infringement. An affirmative answer to this question is illustrated in *Leesona* where a patented battery system envisioned that many parts (*i.e.*, anodes) would be necessary to keep the battery in operation. During the normal "life cycle" of a battery, the 22 anodes for each battery would be replaced approximately 50 times. The battery's very uniqueness was found in the replacement of the anodes rather than in the reliance on "a cumbersome recharging device." 599 F.2d at 975, 202 USPQ at 440.

Whether King would anticipate additional income from the sale of spare parts is a finding which we cannot disturb unless it is clearly erroneous. *Paper Converting, supra,* 745 F.2d at 23, 223 USPQ at 600.

We agree with Otari, however, that on the record before this court, there is no evidence, other than unsupported arguments made by counsel, that King normally anticipated selling spare parts as part of the overall swing arm package.[11] In addition, we are unable to find any evidence that the availability of spare parts is critical to the uniqueness of the '153 swing arm device. As we have seen, "spare parts" in and of itself is an unclear term capable of more than one definition. Only when a spare part falls under the "entire market value" rule may the patentee recover. On the basis of the evidence before us, we cannot find a sufficient basis for the bare conclusion that King would have made the sales of "spare parts" but for Otari's infringing sales. Accordingly, we vacate the district court's award of lost profits based on spare parts and remand for a determination of whether King's spare parts are of the type for which it may properly recover.

C. Increased damages.

King appeals from the district court's determination that it is not entitled to either increased damages under 35 U.S.C. § 284 or an award of attorney fees as permitted by 35 U.S.C. § 285. In support of its argument that the district court erred, King asserts that Otari set out on a willful and deliberate path of infringing the '153 patent. An award of increased damages, however, is within the discretion of the trial

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[11] As we pointed out, *supra*, one spare splicer per three machines was recommended in the Morningstar offer. However, we are unable to find that such evidence might have been considered as relevant by the district court in light of the disparity between the approximately 2-1/2% of gross sales for spare parts found in the Morningstar offer and the 20% of gross ultimately found by the district court.

court, *see* 35 U.S.C. § 284,[12] and will not be overturned absent a clear showing of an abuse of discretion.

King tells us that a review of the chronology of events over the past 15 years shows that the district court abused its discretion in failing to award increased damages. Before the '153 patent issued, Otari acquired an early King machine and then later filed its own patent application in Japan in 1971. Then, on March 30, 1972, Otari filed an application corresponding to its Japanese application in the United States. On March 19, 1974, U.S. Patent No. 3,797,770('770) entitled "Automatic Cassette Tape Winding Apparatus" was granted on the Otari application.

King has failed to convince us how this type of activity constitutes a basis for a finding of willful infringement. Although this set of facts does not indisputably negate a possible finding of willfulness, one reasonable interpretation is that Otari was attempting to design its tape winding apparatus so as to avoid the claims of the '153 patent. Even though its activities later constituted infringement, by relying on the issuance of its patent, which even cited the '153 patent as prior art, Otari's management might reasonably have believed that its actions were protected as within its own patentably distinct claims, while falling outside the '153 patent claims. For the district court to make such an inference does not constitute clear error.

King also cites *Underwater Devices, Inc. v. Morrison-Knudsen Co.*, 717 F.2d 1380, 219 USPQ 569 (Fed.Cir.1983), for the proposition that Otari had an

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[12]In relevant part, § 284 states that "[t]he court *may* increase the damages up to three times the amount found or assessed." (Emphasis added.)

affirmative duty to seek and obtain legal advice from counsel before the initiation of possible infringing activities. However, as we stated in that case, the district court should always look at the totality of the circumstances. This includes whether Otari secured legal advice and whether it reasonably felt that its activities fell within its own claims which may be patentably distinct. While irrelevant in an infringement analysis, these factors can be considered by the trier in determining Otari's intent in connection with a decision on willfulness *vel non.*

As further evidence of willfulness, King points to a written request in 1973 by Otari for a license on the King tape loading and winding machine. King turned down the offer because it "didn't think there would be any advantage to our corporation to issue a license." Since Otari did in fact infringe the '153 patent claims, argues King, then the offer and subsequent refusal of a license shows that Otari set out on a conscious path of infringing activity.

Events and circumstances surrounding a license negotiation are merely an element of willfulness for the district court to consider. Negotiations might even support an infringer's good faith if the infringer could show that it desired a license agreement as an alternative to unaffordable or expensive litigation costs. *See Gould v. General Photonics Corp.,* 534 F.Supp. 399, 403, 215 USPQ 116, 119 (N.D.Cal.1982). King attempts to distinguish *Gould* by pointing out that the parties in that case negotiated for a license just prior to suit, while in the current case negotiations were some five years before Otari's active sales of infringing devices. We find, however, that the hiatus which King claims as further evidence of willfulness simply represents one factor which the district court

could and most probably did weigh in its determination.

In reaching its ultimate determination, the district court properly weighed the evidence of the totality of the surrounding circumstances in ascertaining the infringer's good faith or its willfulness. *See Underwater Devices, supra*, 717 F.2d at 1390, 219 USPQ at 577. Giving due deference to the trier's right to determine credibility and the weight of the evidence before him, as we must, we cannot agree that the implicit finding of lack of willful infringement was clearly erroneous. Accordingly, we hold that on the record before us it was not an abuse of the district court's discretion to deny King's request for increased damages.

Based on the above evidence of "flagrant disregard of the ['153] patent" and Otari's dilatory and misleading discovery practices, King also asks us to reverse the district court's denial of attorney fees. Like an award of increased damages, an award of attorney fees under 35 U.S.C. § 285 is discretionary, and such discretion should only be exercised upon a finding of exceptional circumstances. *See Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 712-13, 218 USPQ 969, 975 (Fed.Cir.1983). For the same reasons set forth above and because a motion for sanctions relating to discovery practices is still awaiting resolution in the district court, we find that the district court did not abuse its discretion, and therefore affirm the denial of King's attorney fees.

V.

SUMMARY

We have fully considered all the issues raised by King and Otari on appeal and cross-appeal. The de-

cisions of the district court on validity and infringement are affirmed. The decisions on damages and fees are also affirmed, except the award based on spare parts, which is vacated and remanded for further proceedings in accordance with this opinion.

AFFIRMED IN PART, VACATED AND REMANDED IN PART.

APPENDIX ITEM E

IN THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

KING INSTRUMENT CORPORATION,
Appellant/Cross-Appellee,

v.

OTARI CORPORATION,
Appellee/Cross-Appellant.

Nos. 84-1528
84-1529
84-1558
84-1595

ORDER

The petitions for rehearing and the suggestions for rehearing in banc have been filed by both parties in this case,

UPON CONSIDERATION THEREOF, it is Ordered by the Court that the petitions for rehearing be, and the same are hereby, Denied.

The suggestions for rehearing in banc are declined.

FOR THE COURT

Francis X. Gindhart, Clerk

Dated: September 17, 1985
cc: Elmer S. Albritton
Allen Kirkpatrick

APPENDIX ITEM F
PLAINTIFF-APPELLANT/CROSS-APPELLEE KING'S REPLY AND ANSWERING BRIEF

IN THE

UNITED STATES COURT OF APPEALS

FOR THE FEDERAL CIRCUIT

Appeal Nos. 84-1528, 84-1529, 84-1558, and 84-1595

KING INSTRUMENT CORPORATION
Plaintiff-Appellant/Cross-Appellee

v.

OTARI CORPORATION
Defendant-Appellee/Cross-Appellant

Appeal From The United States District Court For The Northern District of California Honorable William A. Ingram, District Judge

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Considered altogether, this evidence corroborates the District Court's Findings 11, 15, 23, 24, 25, 26 and 27 and Conclusions 2, 3 and 4, that the invention of the King '153 patent was nonobvious to people skilled in the art at the time of the invention, and that the '153 patent is valid. The evidence also supports the District Court's Findings 6, 10, and 11 and Conclusion 14 that the invention of the King '358 patent was nonobvious and that the '358 patent is valid.

III. THE KING PATENTS ARE INFRINGED

A. *'153 Patent*

1. The Argument that the '153 Patent is Not Infringed for Lack of Findings on Equivalency Between the Structure Disclosed in the '153 Patent and the Accused Otari Tape *Loaders, Is an After-the-Trial Afterthought Argument.*

The finding of direct and literal reading of the '153 claims on the Otari equipment establishes direct infringement——completely refuting the need to employ equivalents. *Atlas Powder Co. v DuPont de Nemours & Co.*, App. No. 84-504, Slip Op. at 23 (Fed Cir. Dec 27, 1984). (See Supp. Addm. 39).

Otari argues that "the claims at issue are 'means plus function' claims, requiring findings of equivalency between the accused machines and what is described in the '153 application. (sic)" Otari cites neither claims nor claim language in support of its point. No evidence was presented at trial on the issue, Otari declining to cross-examine King's expert Zimmerman (JX 908-912). The direct testimony of Mr. Zimmerman was that claim 2 (JX. 833), claims 4, 5 and 6 (JX.

834-837), claim 8 (JX. 838), claim 9 (JX. 839), claim 10 (JX. 840-856), claim 11 (JX. 856-857), claim 12 (JX. 858), claims 14, 15 (JX. 858, 859), claim 16 (JX. 860, 864) are all directly infringed by the Otari machines.

APPENDIX ITEM G

IN THE
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Excerpt From
JOINT APPENDIX
(page 01576)

A YES.

Q What is the reason for your belief as to this?

A In determining infringement of a claim, one looks at the claim language and sees whether the language of the claim is directly infringed or, in some cases, whether by relying on the doctrine of equivalence, whether the claim is infringed.

In this case, I did not rely on the doctrine of equivalence. I found that the Otari VL 600 included each and every element as specified in the claim and it served the same function.

The fact that the VL 600 may do other things or additional things than what is claimed is not relevant

to the issue of infringement. It might also play a musical instrument at the completion of each cycle, but that doesn't mean that it would not constitute an infringement of the subject matter which is claimed in 358.

Q Thank you.

Mr. MacIntosh: I have no other questions, Your Honor.
The Court: Cross?
Mr. Limbach: Yes, Your Honor.

CROSS-EXAMINATION

By Mr. Limbach:

Q Mr. Zimmerman, you have stated your opinion as